Environmental Community Letter

Lawrence Livermore National Laboratory

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January 1996

LAB ISSUES ENVIRONMENTAL REPORT FOR 1994

The 1994 annual environmental report for Lawrence Livermore National Laboratory shows Lab operations continue to pose no threat to the environment or to human health.

The report, released by the U.S. Department of Energy, summarizes the results of the Laboratory's environmental monitoring and modeling programs, and demonstrates Laboratory compliance with federal, state and local environmental laws and regulations.

The Environmental Protection Department last year performed analyses on more than 200,000 analytes from more than 17,000 environmental samples taken on and off Lab sites. The Department's environmental monitoring program samples air, soil, ground and surface water, tap water, rain, stormwater runoff, wastewater, sewer effluent, vegetation and foodstuff. Measurements also are made of environmental radiation. The results of monitoring analyses, environmental impact assessments and environmental compliance activities are used to produce the annual report.

The 1994 report shows that any amount of radioactivity released from the Laboratory continues to be far below the regulatory limits set for radiation protection of the public, as it has been since publication of the report began in 1971. The potential radiation dose to a member of the public caused by radioactivity released from the Lab in 1994 was less than 1 percent of the U.S. Environmental Protection Agency standard, and 4,000 times smaller than the dose received from natural background radiation.

The Lab routinely monitors ground water wells in the Livermore Valley and at Site 300 to complement its extensive on-site monitoring activities associated with known areas of ground water contamination. Tritium, a radioactive form of hydrogen, is measured, as well as other radioisotopes and a wide range of inorganic and organic constituents of potential concern. All measurements indicated Lab operations had minimal impact on Valley ground water in 1994.

Concentrations of compounds of concern measured in surface water, rainfall, potable water and water supply wells for 1994 were consistent with historical records and well below regulatory limits. Measured radioactivity in surface water, potable water and drinking water wells was well below drinking water standards, with the exception of measurements of storm water samples collected in November at one location upstream and off the Livermore site. The origin of this source is unknown, and there were no analytical results from air sampling that would tie the storm water results to airborne emissions from the Lab.

The overall trend is a decrease of tritium in Valley ground water. The mean tritium activity in ground water wells has declined more than 50 percent in the past six years.

In 1994 there were two releases to the sanitary sewer system that slightly exceeded discharge limits. Those involved methylene chloride (found in a monthly sample at 1.5 parts per million — above the discharge limit of 1.0 part per million) and zinc (found one day at 3.3 milligrams per liter — above the discharge limit of 3.0 milligrams per liter).

In general, Lab impact on vegetation and foodstuff in 1994 was minimal.

Tritium levels in Valley vegetation were far below regulatory standards, and generally lower than those observed in previous years. Tritium concentrations in Livermore wines remained at levels far below drinking water standards.

Analytical results and evaluations generally show a decrease in contaminant levels, reflecting both decreased Lab operations involving potential pollutants and the responsiveness of the Lab in controlling those pollutants.

Copies of the Laboratory's *Site Annual Environmental Report for 1994* are available for review at the Lab's Visitors Center on Greenville Road in Livermore; at the Livermore, Stockton and Tracy Public Libraries. The Lab's *Site Annual Environmental Reports* for both 1994 and 1993 are on the Internet at <http://www.llnl.gov>. The reports will be listed under the home page headings "Institutional Publications" and "Technical Papers." Or, call Bert Heffner at (510) 424-4026 for a "hard" copy.

SITE 300 CLEANUP PUBLIC WORKSHOP JANUARY 24, 1996

The U.S. Department of Energy (DOE) and Lawrence Livermore National Laboratory (LLNL) invite the public to attend a Public Workshop to discuss a DOE/LLNL plan to expedite the environmental cleanup of contaminated soil and ground water at the Laboratory's Site 300 Experimental Test Site. There will be no increase in potential risk to the public as a result of implementing this plan.

DOE, LLNL, and the regulatory agencies overseeing the site remediation are speeding up the environmental cleanup of the site by reducing the number of regulatory documents to be prepared. In place of those documents, resources will be focused to cleanup the site sooner than originally planned. These actions will be documented in a revised Appendix A of the Federal Facility Agreement for Site 300.

Site 300 is located about 8 miles west of Tracy, California in a remote Altamont Hills. DOE/LLNL have been conducted under the Comprehensive Environmental Response, Compensation and Liability Act with oversight provided by the U.S. Environmental Protection Agency, the California Department of Toxic Substances Control, and the California Regional Water Quality Control Board.

The Public is invited to attend a Public Workshop to be held on January 24, 1996 at 3-5pm and 6-8pm at the Tracy Inn, Tracy, California.

Any member of the public wishing to review the planned schedule changes may do so at the following locations:

LLNL Visitor's Center
Lawrence Livermore National Laboratory
(Enter from Greenville Road off Interstate 580)
Livermore, California
Hours: M-Tues. 9-4pm, Wed 1-4pm, Thurs-Fri 9-4pm

Tracy Public Library
20 East Eaton Avenue
Tracy, California

For more information, please call:
Bert Heffner (510) 424-4026
Lawrence Livermore National Laboratory

WM PEIS COMMENT PERIOD EXTENDED

DOE tells us that the public comment period has been extended by sixty days, from a closing date of December 21, 1995, to a closing date of February 19, 1996 on the Draft Waste Management Programmatic Environmental Impact Statement (WMPEIS). All comments postmarked by the extended closing date will be considered in preparing the final Programmatic Environmental Impact Statement (WMPEIS).

Written comments should be mailed to the following address:
U.S. Department of Energy
Waste Management PEIS Comments
P.O. Box 3790
Gaithersburg, Maryland 20885-3790

Requests for information should be directed to the Center for Environmental Management Information at the toll-free number, 1-800-736-3282.

LAB WINS NATIONAL POLLUTION PREVENTION AWARD

The National Award for Radioactive/Hazardous Waste Recycling recognizes Lab efforts that last year resulted in the recycling of more than 400 tons of hazardous material and corresponding government savings of hundreds of thousands of dollars.

The Lab routinely recycles various hazardous materials, including electrical transformers, fluorescent tubes and ballasts, cleaning fluids, motor oil, gasoline, chemicals and empty containers. As an example, the Lab earlier this year recycled 20,000 gallons of diesel oil recovered from underground storage tanks.

The Lab's unique Chemical Exchange Warehouse (CHEW) received special mention in the award. The Warehouse was established as a way to recycle unused chemicals. It collects surplus, usable chemicals from around the Laboratory and stores them until a new user can be found. Since its inception in 1993, CHEW has recycled more than 2,450 items and saved the Lab more than $368,000 in chemical and waste disposal costs.

GASOLINE SPILL AREA SOIL CLEANUP COMPLETED

Environmental regulatory agencies have declared soil clean-up above the water table to be complete at the site of an underground gasoline spill. This is the first formal regulatory closure of a non-exavation clean-up activity at the Lab's Livermore site since clean-up began in 1988.

The area declared restored is where an underground gasoline storage tank leaked into the ground a number of years ago. To clean up the spill, Lab scientists employed a combination of innovative technologies, including adaptive pumping, vapor extraction, and underground steaming and electrical heating.

Over a five-year clean-up period, scientists removed over 10,000 gallons of gasoline from ground water and unsaturated sediments. Most of the gasoline was removed in 1993 through vapor extraction during underground steaming and electrical heating — a process called Dynamic Underground Stripping.

The U.S. Environmental Protection Agency, the Regional Water Quality Control Board - San Francisco Bay Region, and the California Department of Toxic Substances Control recently concurred that soil clean-up efforts above the water table at the site of the gasoline spill were no longer necessary. Regulators concluded that the soil remediation effort had met or exceeded Applicable or Relevant and Appropriate Requirements as stated in the Livermore Site Record of Decision agreed to be the regulatory agencies in 1992. Clean-up of contaminated ground water continues.

MWMF EA APPROVED

The Environmental Assessment (EA) for the Mixed Waste Management Facility (MWMF) has been approved by DOE/OAK. The completion of the National Environmental Protection Agreement (NEPA) process allowed for the award/obligation of the Phase 1 Construction Package (Site Utilities and Improvements) for the Decontamination and Waste Treatment Facility (DWTF) and Phase 2 (construction of the Mixed Waste Management Facility). The EA for the remaining phases of work should go public early in 1996. For information on the MWMF and DWTF, call (510) 424-4026.

SITE 300 PROGRESS

Site 300's Building 834 Operable Unit now has a signed Interim Record of Decision and the GSA Feasibility Study is final. The Draft GSA Proposed Plan was submitted to regulatory agencies for comment December 15, 1995.

Tri Valley Citizens Against a Radioactive Environment have received a Technical Assistance Grant from the Environmental Protection Agency. The award funds their participation in the Site 300 cleanup. Several meetings and a site tour have been held, with documents and briefings provided to their technical expert and citizen members of the TAG team.

LAB CONTROLLING CONTAMINATED GROUND WATER AT MAIN SITE

With the recent activation of new pipelines and ground water extraction wells at Lawrence Livermore National Laboratory, scientists have gained control of a plume of contaminated ground water that moved beyond the Lab's southwest boundary.

The new facilities are part of a "picket fence" of treatment stations, pipelines, wells and discharge facilities being erected along the Lab's western edge to deal with polluted ground water beneath the site. The facilities have arrested further westward migration of contaminated water that moved past Lab boundaries.

Ground water beneath the Lab is contaminated primarily with the solvents trichloroethylene and tetrachloroethylene. These were used as aircraft cleaners when the site was a World War II Naval Air Station.

The Clean-Up is Going Faster Than Anticipated. Since the Lab's ground water clean-up project began in 1989, more than 200 million gallons of ground water have been treated, and more than 200 pounds of solvent removed from the water. There are now five ground water treatment facilities at the Lab, connected to 10 pipelines and 30 extraction wells.

"The rate of clean-up has exceeded predictions made when the work started, and will increase as more facilities are brought online," said Albert Lamarre, program leader of the Lab's main site ground water clean-up project.

Lamarre said new technologies eventually may be employed on the project, further reducing clean-up time — originally estimated at 53 years.

In January, work will begin on another pipeline to ensure no additional contaminated ground water moves past the Lab's western boundary. Four more treatment facilities and additional extraction wells are scheduled for construction over the next several years to clean water beneath the site and to ensure no additional contaminated ground water migrates anywhere off-site.

Questions or Comments

If you have questions or comments, or if you would like more information about LLNL's Speaker's Bureau and the environmental tour, or if you wish to be included on the mailing list for DOE/LLNL environmental projects, please call or write:

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And please let us know what you think of the *Environmental Community Letter*.

H. F. Heffner
Environmental Communications
Environmental Protection Department

LLNL News releases are also available on the World Wide Web of the Internet at URL http://www.llnl.gov, on NASW in Compuserve's Journalism Forum, and on UC Newswire.

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